

Appln No. 10/722,204
Preliminary Amdt date December 29, 2004

Amendments to the Specification:

Please find attached hereto a substitute specification, and a redlined copy of the substitute specification.

Please amend the abstract as follows:

[METHODS FOR FABRICATION AN ALIGNED
OPTOELECTRONIC WAVEGUIDE CIRCUIT]

ABSTRACT OF THE DISCLOSURE

Two techniques are disclosed for writing waveguides between laser diodes and [a] an optical fiber [channel] such that the laser diodes are aligned with their respective waveguide facets. The first technique utilizes a light sensitive polymer, such as a ultra-violet (UV) cross-linkable polymer. A precision writing system locates the light emitting centers of the laser diodes and writes the waveguide circuit by exposing the waveguiding regions with the appropriate light. The unexposed areas of the core layer are developed with a solvent and removed. The entire device is then encapsulated with a low-index cladding polymer. The second technique utilizes an active polymer approach in which waveguide regions are formed when the writing beam aligns the dipole molecules in the polymer to cause a change in the refractive index of the polymer.